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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,571	10/31/2003	Takao Nakazaki	044499-0183	8423

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EXAMINER

DEB, ANJAN K

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/697,571

Applicant(s)

NAKAZAKI ET AL.

Examiner

Anjan K. Deb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-8 is/are rejected.  
7) ☒ Claim(s) 9-11 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claim 9 is objected to because of the following informalities: In claim 9, at the end of line 1, "an" should be --a--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US 4,700,131).

Re claim 1, Miller discloses sensor device 10 comprising coated electric wire 30 (helical winding of insulated copper wire) wound around a detection circuit in a planar manner (Fig. 1) so as to electrostatically shield (Faraday shield) the detection circuit, wherein the electric wire is coated with an insulating material (column 3 lines 37-39, 59-63).

Re claim 2, Miller discloses wherein the coated electric wire is spirally wound (helical winding) around the detection circuit in a single manner (column 3 lines 37-39, 59-63).

Re claim 3, Miller discloses detection circuit board 57 having the detection circuit 42 (coils) and a cylindrical case (outer cylindrical magnetic shield)(column 2 lines 42-45) wherein the coated electric wire 30 is wound around the detection circuit board in a cylindrical manner so

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as to form a cylindrical surface, and the direction of an axis of the cylindrical surface is parallel to the direction of the axis of the case (Fig. 1).

Re claim 4, Miller discloses sensor device comprising detection coil 42 having a core (column 2 lines 36-42) and the detection circuit includes an oscillation circuit (signal generator)(abstract) having the detection coil 42. Re proximity sensor and coil serving (functioning) as a resonance element [see MPEP 2114 R-1 — Functional Language:

**APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART**

>While features of an apparatus may be recited either structurally or functionally, claims<directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971);< In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original)]. Clearly the magnetic field sensor disclosed by Miller could be used as a proximity sensor by detecting magnetic field associated with an object.

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 4,700,131) in view of applicant's admitted prior art (see specification pages 1-3).

Re claims 5 and 6 Miller disclosed all of the claimed limitations as set forth above including metallic film (outer cylindrical magnetic shield)(column 2 lines 42-45) for electrostatically shielding and the detection coil is formed at the outer surface of the core, and the coated electric wire is electrically connected to ground, except coated electric wire are electrically connected to the metallic film of the core and to ground. However these features are disclosed in the admitted prior art (pages 1-3).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Miller by adding electrical connection of coated wire to metallic film and to ground as disclosed in the admitted prior art for maintaining the electrostatic shield at a common ground potential for effectively shielding the sensor from electromagnetic noise.

Re claims 7 and 8 Miller did not expressly disclose coating strength of coated electric wire used for shielding is greater than that of the coated electric wire to be used as a coil wire of the detection coil, but would have been obvious to do so as required for providing the required electrical insulation as well as for adequate mechanical strength.

***Allowable Subject Matter***

6. Claims 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 9-11 are allowable because the prior art does not disclose or fairly suggest wherein the sensor device is a photoelectric sensor device including a light receiving element for converting light from a region to be detected into an electric signal; and a signal relating to the state of the region to be detected is output based on an output from the light receiving element.

***Response to Arguments***

7. Applicant's arguments with respect to Rejection under 35 U.S.C. § 102 (b) of claims 1-4 as being anticipated by Miller (US 4,700,131) has been carefully considered, but the arguments presented are not persuasive for the following reasons. Applicant has agreed that Miller provides an electrostatic shield formed by winding coated electric wire (insulated copper) but has stated that Miller differs from the claimed invention because the coated electric wire form a shield having a cylindrical shape and would not form any planar portion as in claim 1. Given a broad interpretation of the word "planar" examiner is of the opinion that the electrostatic shield provided by Miller offers a planar<sup>1</sup> or a smooth surface without any surface imperfections as clearly evidenced by the element 30 shown in Figure 3 by Miller. In addition, even though the shape of electrostatic shield is cylindrical it would still provide a

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planar surface portion. For example, earth has a spherical shape but provides a planar surface portion. Applicant further states that Miller also fails to disclose that the shield 30 shields a detection circuit. Examiner is of the opinion that Miller discloses that the shield 30 shields a detection circuit, wherein the detection circuit comprises coils 42 and 43 (column 3 lines 39-63). In response to applicant's argument that Miller's device is unfit for the intended purpose to sense light but this feature is not recited in the claim 1. With respect to applicant's argument regarding rejection of claim 3, that Miller does not disclose coated wire is wound around a circuit board, the Faraday shield comprised of helical winding of insulated copper wire is wound over a bobbin which forms a cylindrical surface. A bobbin<sup>2</sup> by definition is a cylinder over which wire (thread) is wound. The bobbin is broadly interpreted as a detection circuit board over which the coated electric wire is wound.

In conclusion, the essence of this invention is a sensing device comprising planar electrostatic shield formed by coated electric wire wound around a detection circuit this feature is disclosed in the prior art disclosed by Miller.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Skillicorn (US 5,682,412) discloses coated electric wire 304 wound around a detection

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<sup>1</sup> Planar = lying in a plane; plane = to make smooth or even (Merrian Webster's Collegiate Dictionary, 10<sup>th</sup> edition)

<sup>2</sup> bobbin = a cylinder or spindle over which wire is wound (Merrian Webster's Collegiate Dictionary, 10<sup>th</sup> edition)

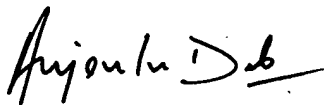
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circuit 246 in a planar manner (Fig. 8) so as to electrostatically shield the detection circuit 246 (column 13 lines 37-40).

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached at 571-272-2399.



**Anjan K. Deb, PhD, PE (Electrical)**

Primary Patent Examiner

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4/18/06

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